

Appl. N . 10/649,084
Amtd. Dated May 24,2004
Reply to Office Action f February 23, 2004

REMARKS

Drawing Objections

The drawings are objected to because Figures 3-5 and 7 lacks the proper crosshatching which indicates the type of materials. Figures 1-2B should be designated by a legend such as --Prior Art--because only that which is old is illustrated.

Applicant has corrected as what the Examiner suggested, thus, the drawing objections are thereof are removed.

Specification Objection

The abstract of the disclosure is objected to because in line 4, it contains the terms "while have opposite twist directions", which is improper grammar.

Applicant has amended the terms "while have opposite twist directions" to "while having opposite twist directions" to remove the objection thereof.

Claim Rejections under 35 U.S.C. 103

Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morimoto (U.S. Patent No. 6,355,876) in view of Donner et al. (U.S. Patent No. 6,452,094).

Applicant does not agree with the point of the Examiner. Detailed explanations are given below.

Referring to independent claim 1 of the subject matter, a cable defined therein

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comprises a plurality of twisted pairs of conductors in a dense matrix-like form defining thereof horizontal rows and oblique columns with each other in a rectangular coordinate system wherein the twisted pairs in the same row have the same twist direction while having opposite twist directions with those in the two neighboring rows aside. For each row, there is a ninety degrees phase shift between every adjacent two pairs. For each column, there is a non-ninety degrees phase shift between every adjacent two pairs.

Referring to Figure 2 of Morimoto, a twisted-pair cable 1 includes a pair of twisted-pair core wires 5 respectively including a pair of insulated core wires 4, each of which has an electrical conductor 2 and an insulator layer 3 coated thereon. The twisted-pair cable 1 further includes a core cable assembly 7 formed by twisting a pair of unitary core wire complexes 6, each of which is formed by twisting the pair of twisted-pair core wires 5. An outer coating 8 made of insulator resin 8 surrounding the core cable assembly 7.

Referring to Figures 2A-2B of Donner et al., a local area network cable capable of high speed signal transmission has a plurality of twisted pairs of conductors enclosed within a jacket. Each of the twisted pairs has a different twist frequency than any of the other pairs, and at least one of the pairs has a direction of twist that is different from the other twisted pairs, that is, it may have a right hand twist where the other pairs have a left hand twist. In a four pair cable, two of the pairs, of different twist frequency, have imparted thereto a right hand twist, and two of the pairs have a left hand twist.

The main object of the subject matter is to provide a scientific, systematic,

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and easy way to lower the crosstalk among the three dimensionally arranged twisted pairs of conductors. Therefore, the essence of the subject matter is to arrange every adjacent two twisted pairs of each row to have a ninety degrees phase shift and every adjacent two adjacent twisted pairs of each column to have a non-ninety degrees phase shift. However, neither Morimoto nor Donner et al. discloses this essential feature of the subject matter.

Therefore, independent claim 1 is patentable over Morimoto in view of Donner et al.

Since amended independent claim 1 is believed to be allowed, dependent claim 2 which depends from claim 1 is also believed to be patentable.

In view of the above claim amendments and remarks, the subject application is believed to be in a condition for allowance and an action to such effect is earnestly solicited.

Respectfully submitted,
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